

ENERGY-AS-A-SERVICE

Project Delivery Method for Healthcare

hfma
arkansas chapter

Bernhard

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Meet the Presenters

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LEVERAGING TECHNOLOGY TO BUILD BETTER IDEAS.

102 years of experience


2,000+ employees across the U.S.

offices in **12** states

900+ active projects

\$709M annual revenue

147M SF of energy conservation



OFFICE LOCATION
PROJECTS & CLIENTS


Bernhard.com

VISION

To be the leading Energy-as-a-Service provider in North America through delivery of excellent, high value service and innovative solutions for our clients.



LEADERS IN THE SUBSCRIPTION ECONOMY

-  Microsoft
-  Dropbox
-  NETFLIX
-  Adobe
-  MUSIC
-  Spotify

- Lower cost to access product/service
- Recurring payment vs. outright purchase
- Transfer of burdens of ownership
- Fluid updates
- Improved business/user continuity
- Liberates customer to focus on core business

POLLING QUESTION:

What is the most appealing attribute of the subscription economy?

1. Lower cost to access product/service
2. Recurring payment vs. outright purchase
3. Transfer of burdens of ownership
4. Fluid updates
5. Improved business/user continuity
6. Ability to focus on core business
7. Guaranteed outcome

Text your vote to (808) 745-1404

What is the most appealing attribute of the subscription economy?

Text 1 Lower cost to access product/service

Text 2 Recurring payment vs. outright purchase

Text 3 Transfer of burdens of ownership

Text 4 Fluid updates

Text 5 Improved business/user continuity

Text 6 Ability to focus on core business

Hide results Hide instructions

AGENDA

- 1 DRIVERS OF ENERGY-AS-A-SERVICE (EAAS) ADOPTION
- 2 EAAS DEFINITION
- 3 CASE STUDIES
- 4 FINANCIAL IMPACT OF EAAS
- 5 QUESTIONS & ANSWERS

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LEARNING OBJECTIVE #1

Gain an understanding of the market forces impacting the health care industry and how those are driving Energy-as-a-Service adoption.

DRIVERS OF EAAS ADOPTION



HEALTHCARE UNDER PRESSURE

"The sector has shown considerable resiliency over the years, weathering significant events such as the Great Recession and legislative changes to funding, however, the coronavirus presents entirely new and fundamental challenges for the sector in the short term in the form of volume and revenue disruption, and over the medium to longer term with expected deterioration of individual provider payor mixes and possible changes in the behavior of healthcare consumers."

- Fitch, July 2020

Rising Costs: War On Talent

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“UAMS currently has about 360 vacancies for health care providers, including 230 vacancies just for nurses, Patterson said. UAMS is so desperate to find nursing staff that it is willing to pay signing bonuses of as much as \$25,000.”

“It’s a workers’ labor market right now and increasingly so for blue-collar workers,” said Becky Frankiewicz, president of staffing firm ManpowerGroup Inc.’s North America operations. “We have plenty of demand and not enough workers.”

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Rising Costs: Business Continuity

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The New York Times

‘Such Dire Straits’: Chaos Unfolds in Texas Hospitals

The state’s power failure has plunged some hospitals into crisis, even as they are still reeling from the coronavirus pandemic.



Climate Change Indicators: Weather and Climate

Rising global average temperature is associated with widespread changes in weather patterns. Scientific studies indicate that extreme weather events such as heat waves and large storms are likely to become more frequent or more intense with human-induced climate change. This chapter focuses on observed changes in temperature, precipitation, storms, floods, and droughts.

Shreveport area hospitals without water due to extreme winter weather



California wildfires continue to impact hospitals, other healthcare facilities as containment inches higher **HEALTHCARE FINANCE**

While some hospitals have resumed some level of operation, at least one has not and skilled nursing facilities have been permanently evacuated.

Rising Costs: Energy Transition

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Stakeholder Expectations

- **Citizens:** More than six in ten Americans say they are at least “somewhat worried” about global warming.
- **Employees:** Employees are pushing employers to be more aggressive in to combat climate change.
- **Investors:** Investors are increasingly demanding greater accountability from boards.
- **Consumers:** 42% of millennials said they have begun or deepened a business relationship because they perceive a company’s products or services to have a positive impact on society and/or the environment.

Moving Organizational energy use towards 100 percent renewables – aspiration or destination?

Deloitte.

Insights from the Deloitte 100 Percent Renewable Transition Survey

Contributing about 10 percent of US carbon emissions and 9 percent of non-greenhouse gas air pollutants means the health care sector may also be contributing to the adverse health impacts of climate change and air pollution. 15 Many health care organizations see this as inconsistent with their overall mission to promote health, and to medical students’ oath to “First, do no harm.” As a result, many are pursuing broad sustainability agendas, including goals to source more renewable energy.

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Lower Revenues

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- Decrease in Hospital Volumes from Pandemic
- Decreased Reimbursement Rates from Government and Commercial Payers
- Increase in Medicare/Medicaid Payor Mix from Retirements

February 2021

COVID-19 in 2021:
The Potential Effect on
Hospital Revenues

KaufmanHall

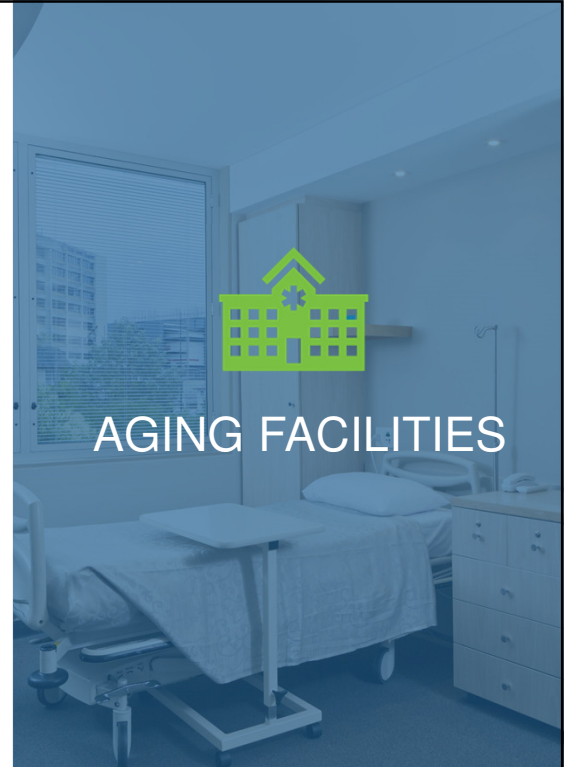
“Our forecast that total hospital revenues in 2021 could be down between \$53 billion and \$122 billion (4 percent to 10 percent of total revenue)”

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- Fighting for the ever-shrinking capital dollar...
- Competing against other needs: Medical Tech, IT, Clinical Programs, Cosmetic Upgrades...
- Difficulty in prioritizing capital renewal and strategic planning
- Average age of U.S. Hospital power plant is 40+ year old.

-Advocate Aurora Health

THE NEW ECONOMY FOR BUILDING INFRASTRUCTURE // 404109086-1



AGING FACILITIES

- Median operating cash flow will drop 10%-15% in 2021 from Moody's annualized third-quarter 2020 estimate
- Softer demand for certain services due to coronavirus fears will continue until pandemic ends
- The outlook for the US not-for-profit and public healthcare sector in 2021 remains negative

-Moody's

THE NEW ECONOMY FOR BUILDING INFRASTRUCTURE // 404109086-1



CREDIT RATING PRESSURE: MOODY'S OUTLOOK

Delivery Method Comparison

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TYPICAL PROJECT DELIVERY METHODS

- 1 No Change to Revenues.
- 2 Increases Operating Costs.
- 3 Increase Leverage Ratios.
- 4 Neutral or Negative Year-Over-Year Financial Outcome.

ENERGY-AS-A-SERVICE

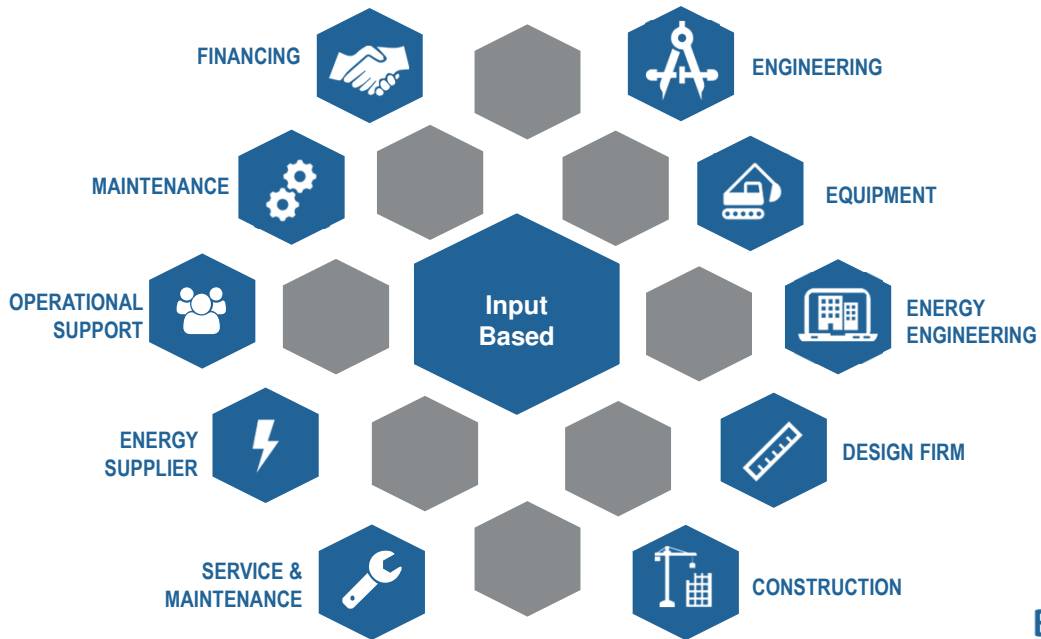
- 1 **Increases**
~~No Change to Revenues.~~
- 2 **Decreases**
~~Increases Operating Costs.~~
- 3 **Improves**
~~Increases Leverage Ratios.~~
- 4 **Positive**
~~Neutral or Negative Year-Over-Year Financial Outcome.~~



WHAT IS ENERGY-AS-SERVICE?

Input Based

17

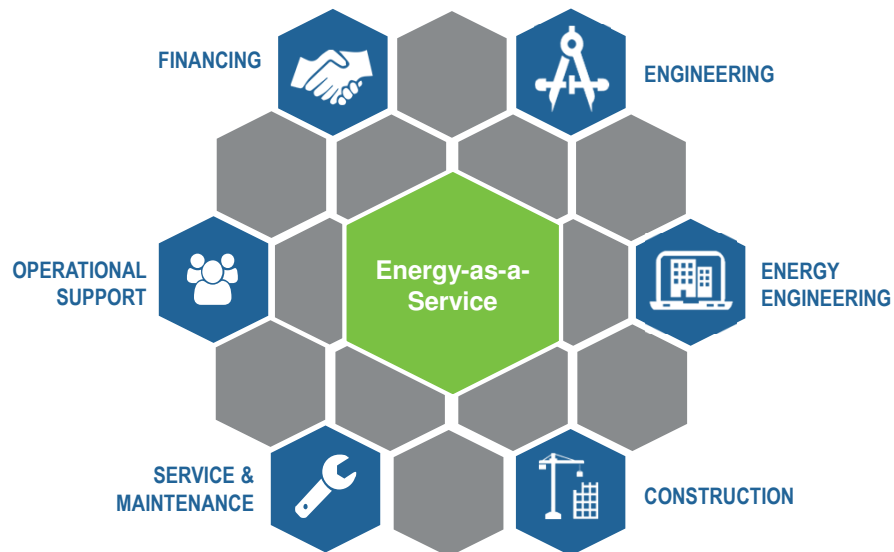


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Outcome Based

18

Energy-as-a-Service (EaaS): A partnership to transfer the risk of operations, maintenance, and renewal of utility infrastructure to a qualified third party who guarantees performance. EaaS transactions are financed off-balance sheet to the customer and the charges are paid via the customer's operating budget.



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Typical Building Improvements

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UPGRADE BAS

Replacing existing controls with new, DDC controls. A comprehensive control system upgrade allows for conversant control algorithms that allow the building to constantly adjust to variations in use.

RETRO-COMMISSIONING

Optimizing the HVAC system to current space uses and code guidance to provide optimal occupant comfort and safety, while optimizing energy consumption.

WATER REDUCTION

Utilizing low-flow plumbing fixtures, faucet aerators, fin-water recovery systems, and automated site landscape watering systems where applicable to reduce building water consumption.

AIR HANDLING UNIT (AHU) OPTIMIZATION

Upgrading controls and components to optimize temperature and static pressure delivery to each occupant space.

DESICCANT DEHUMIDIFICATION

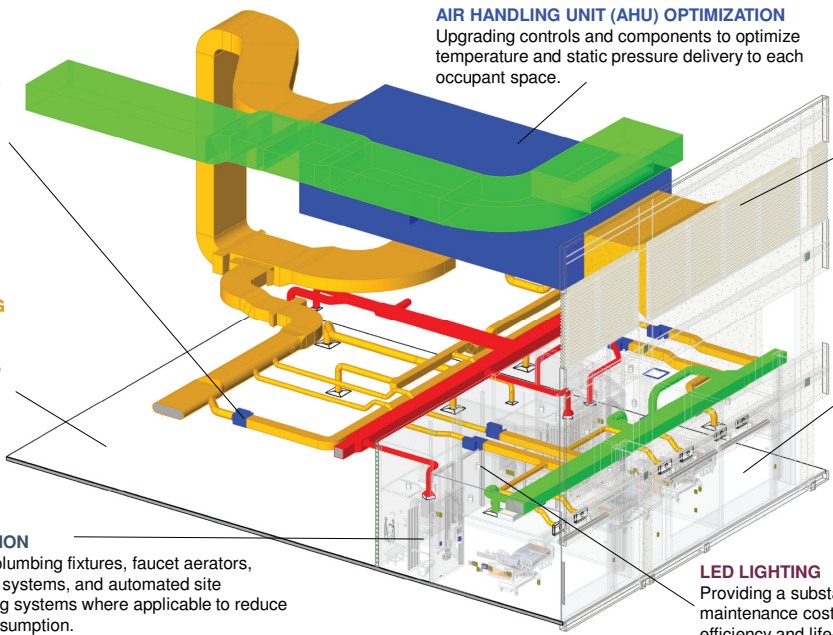
Maximizing the existing air handling unit capacity and allowing for low-relative humidity conditions in sensitive areas served by the system.

PROCEDURE ROOM OPTIMIZATION

Reducing operating and procedure room ventilation rates during unoccupied times while maintaining code-required pressurization and constant temperature control.

LED LIGHTING

Providing a substantial reduction in energy and maintenance cost through increased fixture efficiency and life-span.



Typical Plant Improvements

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VARIABLE PRIMARY PUMPING

Eliminating waste over-pumping and increasing temperature control to maximize chiller efficiency during part-load conditions. This includes the installation of dedicated chiller water pumps with variable speed drives (VSDs) for each chiller, conversion of 3-way control valves to 2-way type, and removal of flow balancing devices to eliminate wasted pressure drop.

CENTRALIZED HEAT EXCHANGER(S)

Eliminating steam distribution by consolidate heating water production at the plant for reduced maintenance and capital renewal costs while enabling use of the Heat Pump Chiller Heater and high-efficiency heating water boilers.

EFFICIENT CHILLERS

Maximizing system efficiency potential by deploying new chiller technology, including magnetic bearings, variable speed compressors, and low-GWP refrigerants.

INSTALL HEAT PUMP CHILLER HEATER

Reclaiming normally-wasted condenser water heat at a higher heat value that can be used for building heating requirements.

BOILER STACK ECONOMIZERS

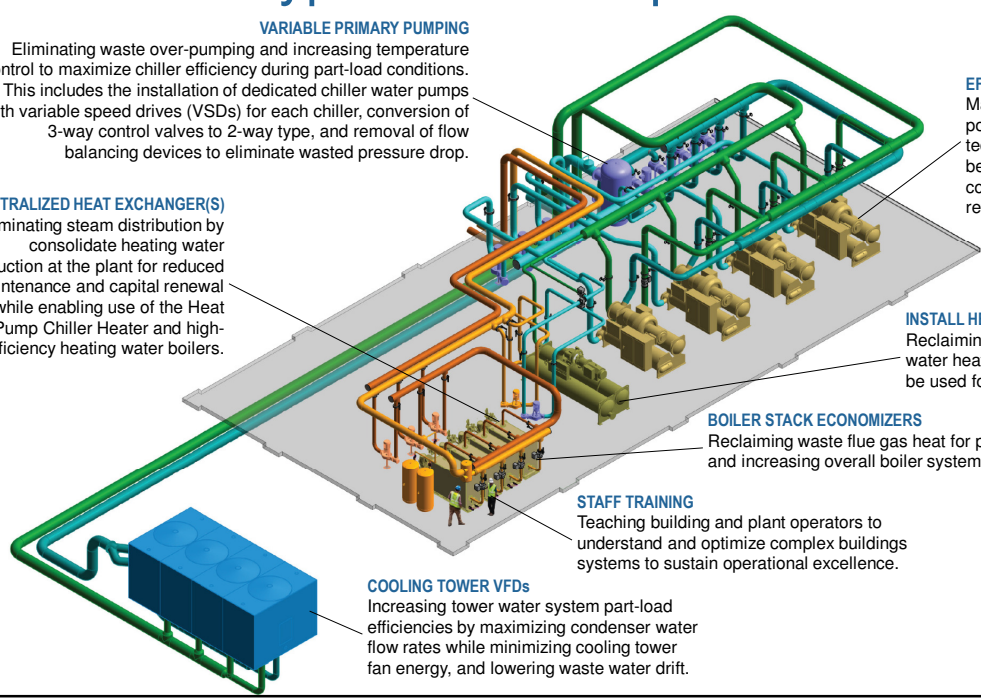
Reclaiming waste flue gas heat for pre-heating feedwater and increasing overall boiler system efficiencies.

STAFF TRAINING

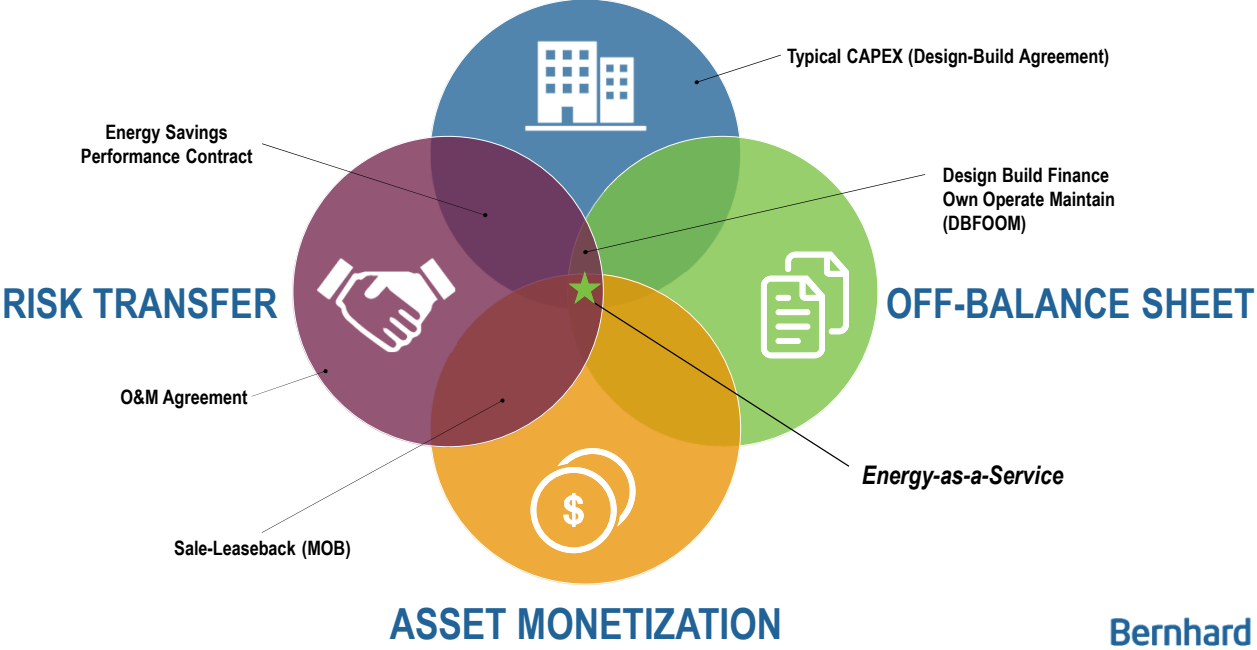
Teaching building and plant operators to understand and optimize complex buildings systems to sustain operational excellence.

COOLING TOWER VFDs

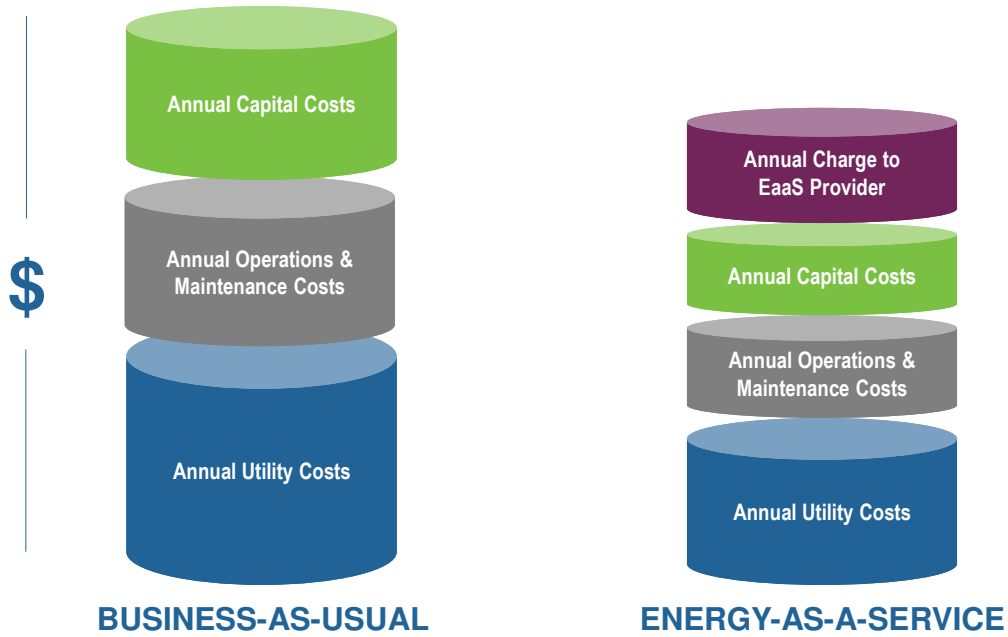
Increasing tower water system part-load efficiencies by maximizing condenser water flow rates while minimizing cooling tower fan energy, and lowering waste water drift.



INFRASTRUCTURE IMPROVEMENTS



Life Cycle Savings



Energy-as-a-Service | Program Benefits

INFRASTRUCTURE

- Capital Renewal & Deferred Maintenance
- Energy Optimization

ACCOUNTING TREATMENT

- Balance Sheet Treatment
- Revenue Recognition



ASSET MONETIZATION

- Positive Interest Rate Arbitrage
- Credit Rating Uplift
- Net Income Uplift
- Portfolio Uplift

RISK TRANSFER

- Monetization of Tax Benefits
- Stabilization of Costs & Risk

SUSTAINABILITY

- Operational Efficiency
- Greenhouse Gas & Carbon Emission Reduction
- Utility Supply Management

Ochsner Health System

Baptist | Grove | Jefferson



\$3,609,000
estimated annual energy savings

25



ENERGY ASSET CONCESSION

Financing • Development • Engineering • Mechanical & Electrical Construction
Commissioning • Retro-Commissioning • Remote Support Services • Operator Training
Operations & Maintenance

| | |
|----------------------------------------------|------------------------------------------------------------|
| <p>15 YEAR TERM</p> | <p>3.4M SQUARE FEET ACROSS 3 FACILITIES</p> |
| <p>\$100M CUMULATIVE EPC COST</p> | <p>\$3.6M EST. ANNUAL ENERGY SAVINGS</p> |







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East Alabama Medical Center

Opelika, AL



\$830,000
annual energy cost savings

26



ENERGY ASSET CONCESSION

Upgrade Chilled Water • Upgrade Steam • Upgrade BAS • Upgrade Hot Water • Retro-Commissioning • OR Upgrades Lighting • Heat Pump Chiller Heater • Remote Monitoring • Operator Training

| | |
|--------------------------------------|---------------------------------------------------|
| <p>30 YEAR TERM</p> | <p>825K SQUARE FEET</p> |
| <p>\$31M PROJECT COST</p> | <p>\$40M NET ADVANCE LEASE PAYMENT</p> |







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Midland Health

Midland, TX





\$664,000
annual energy cost savings

27

ENERGY ASSET CONCESSION
 Upgrade Chilled Water • Upgrade Steam • Upgrade BAS • Upgrade Hot Water
 Retro-Commissioning • Lighting Upgrades • Heat Pump Chiller Heater • Remote
 Monitoring • Operator Training


| | |
|--------------------------------------|----------------------------------------------------|
| <p>15 YEAR TERM</p> | <p>995K SQUARE FEET</p> |
| <p>\$19M PROJECT COST</p> | <p>\$664K NET ADVANCE LEASE PAYMENT</p> |




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LCMC Health

New Orleans, LA






\$8,000,000
annual utility cost savings

28

ENERGY ASSET CONCESSION
 Financing • Development • Engineering • Mechanical & Electrical Construction
 Commissioning • Retro-Commissioning • Remote Support Services • Operator Training
 Operations & Maintenance

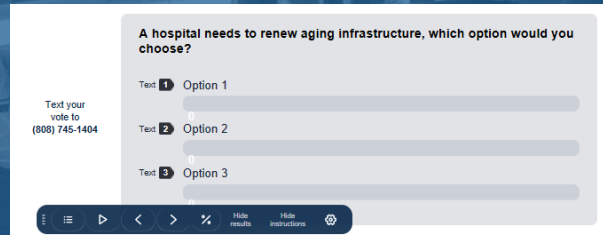
| | |
|----------------------------------------------------------|------------------------------------------------------------|
| <p>15 YEAR TERM</p> | <p>6.1M SQUARE FEET ACROSS 6 FACILITIES</p> |
| <p>\$88M CUMULATIVE IMPROVEMENTS COST</p> | <p>\$8M ANNUAL UTILITY COST SAVINGS</p> |



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POLLING QUESTION:

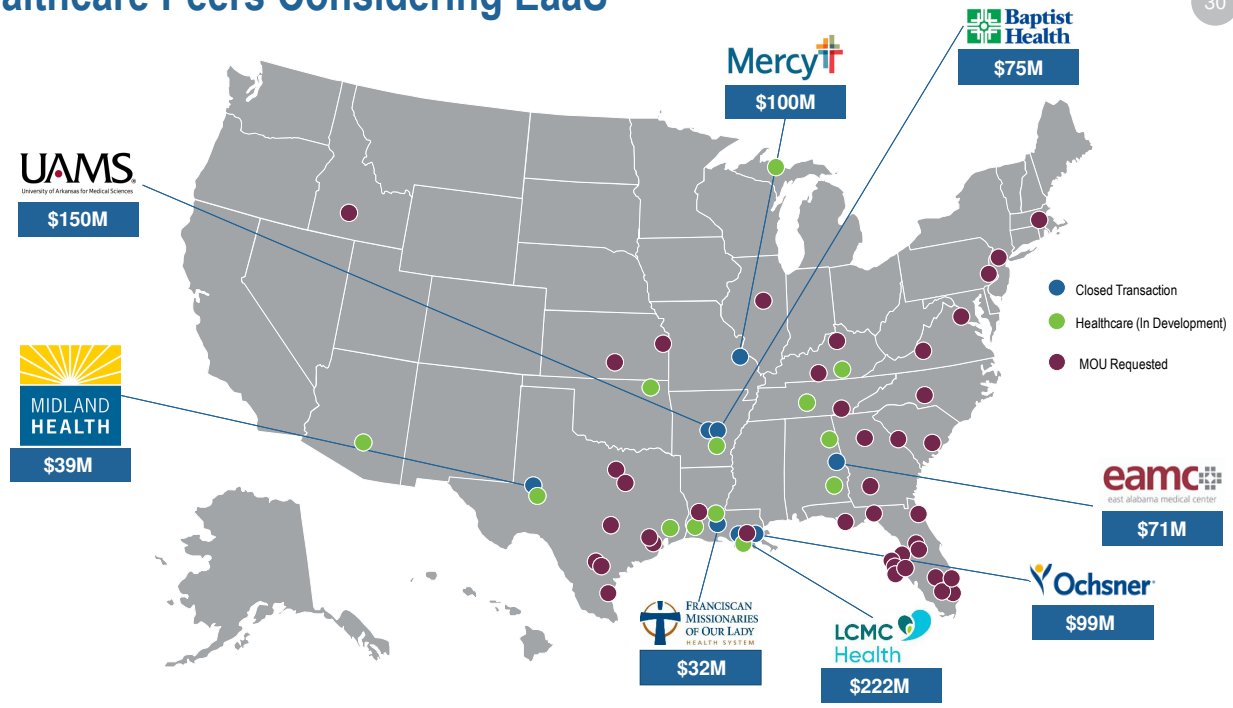
A hospital needs to renew aging infrastructure, which option would you choose?



| Item | Option 1 | Option 2 | Option 3 |
|--------------------------|------------------|------------------|--------------------|
| Upfront Cost | \$20,000,000 | \$0 | \$0 |
| Source of Capital | Equity | Debt | Third Party |
| Provider of Improvements | Local Contractor | Local Contractor | National EaaS Firm |
| Revenues | N/A | N/A | + |
| Leverage Ratio | + | + | - |
| Operating Margin | + | - | - |
| Net Income | N/A | - | + |
| Days Cash on Hand | - | - | + |
| O&M Transfer | No | No | Yes |
| Efficiency Guarantee | No | No | Yes |
| Performance Standards | No | No | Yes |

Healthcare Peers Considering EaaS

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What is a Concession?



OPERATING LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION & MAINTENANCE



ASSET RENEWAL AND OPTIMIZATION



THERMAL SERVICES AGREEMENT



EXPIRY



What is a Concession?



LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION



ASSET RENEWAL AND OPTIMIZATION



THERMAL SERVICES AGREEMENT



EXPIRY

- Bernhard purchases the right to use, operate, maintain, and renew the Energy Assets over a 15-to-50-year period.
- Energy Assets: Assets that produce or distribute heating water, chilled water, or steam.
- Upfront payment is recorded by Customer as prepaid rent and amortized over term.
- Customer classifies the concession as an operating lease.*

**Bernhard is not providing accounting advice.*

What is a Concession?



OPERATING LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION



ASSET RENEWAL AND OPTIMIZATION



THERMAL SERVICES AGREEMENT



EXPIRY

- Bernhard assumes operation of Customer central energy plants.
- All energy plant Operations & Maintenance (O&M) costs are transferred fully and immediately to Bernhard.
- Some or all of the energy plant capital renewal and deferred maintenance (CRDM) responsibilities are transferred to Bernhard.*

**Bernhard must bear the risk of loss.*

What is a Concession?



OPERATING LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION



ASSET RENEWAL AND OPTIMIZATION



THERMAL SERVICES AGREEMENT



EXPIRY

- Bernhard funds and implements plant improvements to optimize performance and resiliency.
- Bernhard funds and implements building improvements to optimize performance and resiliency.

What is a Concession?



OPERATING LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION



ASSET RENEWAL AND OPTIMIZATION



THERMAL SERVICES AGREEMENT



EXPIRY

- Bernhard provides thermal services to Customer.
- Customer makes a recurring monthly service payment to Bernhard.
- TSA is structured to be recognized as an executory contract from accounting perspective.*

*Bernhard is not providing accounting advice.

What is a Concession?



OPERATING LEASE OF ENERGY ASSETS



TRANSFER OF OPERATION



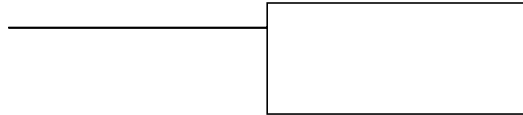
ASSET RENEWAL AND OPTIMIZATION



THERMAL/UTILITY SERVICES AGREEMENT



EXPIRY



- At expiry, Bernhard hands back the Energy Assets to Customer in good working order at no cost to the customer.



FINANCIAL IMPACT OF EAAS



OFF-BALANCE SHEET

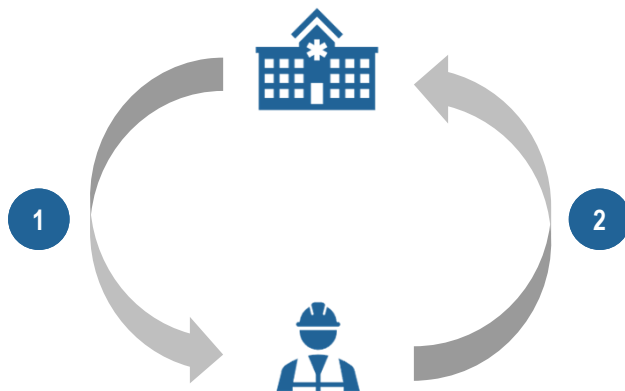
The Thermal Services Agreement charges are not recorded on the balance sheet of customer as debt.

Off-Balance Sheet accounting requires:

- *The Concession Agreement must be accounted for as a lease of the Energy Assets from the customer to the provider.*
- *The Thermal Services Agreement must be accounted for as a service contract (not a lease of the Energy Assets provider to the customer).*

Typical Accounting for EaaS

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1 Lease – Hospital (Lessor) transfers exclusive right to control and use of Energy Assets to Provider (Lessee), including risk of loss and an exclusive *right* of Provider to sell the non-firm capacity of Energy Assets to third-party off-takers.

2 Thermal Services Agreement – Provider is obligated to deliver thermal energy back to the Hospital in accordance with firm capacity requirements and strict performance standards, reserving risk of loss, right to direct use, and substantive right to substitute assets.

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POLLING QUESTION:

Key financial metric?

1. EBIDA

2. Operating Margin

1. Days' Cash on Hand

2. Long-Term Debt/Capitalization

Text your vote to
(808) 745-1404

Key Financial Metric

Text 1 EBIDA

Text 2 Operating Margin

Text 3 Days' Cash on Hand

Text 4 Long-Term Debt/Capitalization

Journal Entries for Transaction

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| # | Item | Debit | Credit |
|---|-------------------------------------------------------------------------|----------------------------------|------------------------------------------------|
| 1 | Advance Lease Payment (Immediate) | Assets (Cash) | Liabilities (Deferred Revenue – Pre-Paid Rent) |
| 2 | Advance Lease Payment (Over Term) | Deferred Revenue (Pre-Paid Rent) | Revenue |
| 3 | EOS Design-Build Agreement (Non-Energy and Building Asset Improvements) | Assets (Fixed) | Assets (Cash) |
| 4 | EAI Design-Build Agreement (Energy Asset Improvements) | N/A* | N/A* |
| 5 | Thermal Services Agreement | Expense as Incurred | Cash |

*Treated as tenant improvements.

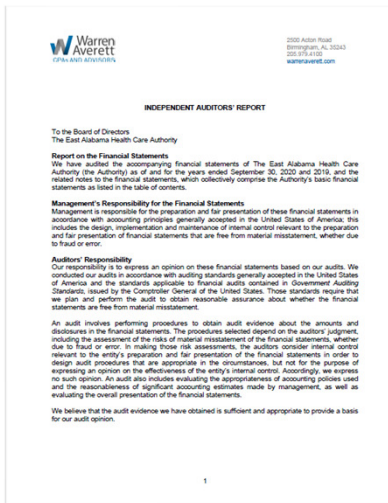
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Income Statement

| Category | Item | Impact |
|-------------------------------------------------------|----------------------------------------------------------|-----------------|
| Operating Revenue | Revenue from Amortization of Total Advance Lease Payment | Increase (+) |
| | Additional Revenue from Core Business Investment | Increase (+) |
| Operating Expense (before depreciation & interest) | Operation and Maintenance Expense Savings | Decrease (-) |
| | Purchased Utility Expense Savings | Decrease (-) |
| | Thermal Services Agreement | Increase (+) |
| Depreciation Expense | Depreciation of Improvements | Increase (+) |
| | Depreciation of Core Business Investments | Increase (+) |
| | Depreciation of Avoided Capital | Decrease (-) |
| Interest Expense | Interest Savings due to Avoided Capital | Increase (+) |
| Net Income | | Increase |



Off-Balance Sheet Accounting Treatment



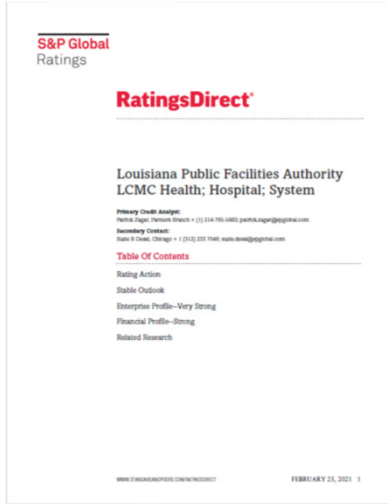
The Energy Asset Concession:

“This payment increased cash on the asset side of the balance sheet and is recorded as unearned revenue on the liability portion of the balance sheet.

No signification changes occurred in long-term debt in 2020. The annual fee for the thermal services will be expenses as incurred.”

S&P Ratings Opinion

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The 'A+' rating on LCMC reflects:

“The transaction and lease arrangement are expected to have a net positive impact on annual operating cash flow ...

We view the rationale for this transaction favorably.”



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Energy-as-a-Service | Program Benefits

INFRASTRUCTURE

- Capital Renewal & Deferred Maintenance
- Energy Optimization

ACCOUNTING TREATMENT

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- Revenue Recognition



ASSET MONETIZATION

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RISK TRANSFER

- Monetization of Tax Benefits
- Stabilization of Costs & Risk

SUSTAINABILITY

- Operational Efficiency
- Greenhouse Gas & Carbon Emission Reduction
- Utility Supply Management

QUESTIONS?



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Appendix

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- Slide 9: <https://www.cnn.com/2021/08/04/us/arkansas-health-care-burnout/index.html>;
<https://www.wsj.com/articles/tight-labor-market-returns-the-upper-hand-to-american-workers-11624210501>.
- Slide 10: <https://www.nytimes.com/2021/02/18/us/texas-hospitals-power-water.html>;
<https://www.epa.gov/climate-indicators/weather-climate>;
<https://www.healthcarefinancenews.com/news/california-wildfires-continue-impact-hospitals-other-healthcare-facilities-containment-inches>; <https://www.ksla.com/2021/02/17/shreveport-area-hospitals-without-water-due-extreme-winter-weather/>;
- Slide 11: <https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/organizational-energy-use-100-percent-renewables.html>
- Slide 12: KaufmanHall - COVID-19 in 2021: The Potential Effect on Hospital Revenues, February 2021
- Slide 13: "Facilities & Infrastructure Projects" – Presentation at ASHE 2019 by York Chan with Advocate Aurora Health
- Slide 14: Moody's - 2021 outlook for US not-for-profit and public healthcare, 11 December 2020

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